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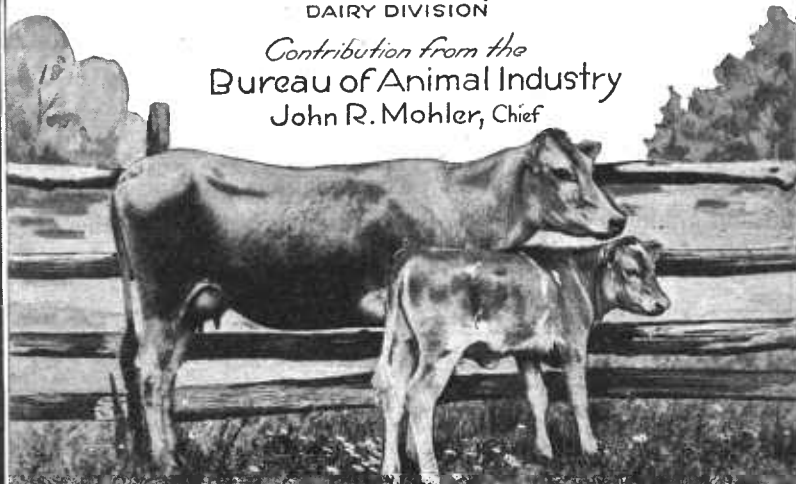
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COOPERATIVE BULL ASSOCIATIONS

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COOPERATIVE BULL ASSOCIATIONS are formed by farmers for the joint ownership, use, and exchange of purebred bulls which they could not own individually. Records show that the purebred animal is more profitable than the grade. The bull association makes high-priced purebreds available to the average farmer. The purchase price and the cost of maintenance are distributed according to the number of cows owned by members, thereby giving each one an opportunity to build up his herd at a minimum expense. The organization also helps its members to market dairy stock and dairy products, to fight contagious diseases of cattle intelligently, and assists in other ways in improving the dairy industry.

The bull association does not give something for nothing, but can give each farmer, in return for \$50, a share in five purebred bulls. These bulls can not increase the production of the cows in a herd, but they may double the production of their daughters. The daughters of association bulls and grade cows can never be registered, but in all other respects they may be the equal of purebreds.

COOPERATIVE BULL ASSOCIATIONS.

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GROWTH OF THE MOVEMENT.

COOPERATIVE bull associations have existed in Europe for a long period. In the United States the first cooperative venture of which there is any record was started in 1908 by the Michigan Agricultural College. On July 1, 1919, there were 78 active associations in 27 States, with a total membership of 2,978, owning 371 purebred bulls. The following tabulation shows the gradual but constant growth of bull associations in the United States:

Number of active cooperative bull associations in the United States, 1908 to 1919, inclusive.

State.	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919
Michigan.....	3	7	8	9	7	8	9	8	8	8	7	7
Minnesota.....		1	1		1	2	2	3	3	3	3	4
Maryland.....				1	1	1	1	1	1	1	1	2
North Dakota.....					2	1	1	1	1	1	1	1
Vermont.....							1	1	1	1	1	2
Oregon.....								1	2	2	2	2
Wisconsin.....								1	1	1	1	2
Illinois.....									1	1	1	1
Iowa.....									1	1	1	1
Massachusetts.....									1	1	1	1
North Carolina.....										4	5	8
South Carolina.....									3	9	9	11
Pennsylvania.....										2	4	10
Missouri.....										1	1	1
Indiana.....											1	3
Utah.....											3	2
Montana.....											1	2
Kansas.....											1	1
Alabama.....												1
Georgia.....												2
Louisiana.....												1
Mississippi.....												6
New Jersey.....												1
Rhode Island.....												1
Tennessee.....												2
Washington.....												1
Wyoming.....												2
Total.....	3	8	9	11	11	12	14	15	24	36	44	78

The history of the cooperative bull association shows that it is especially adapted to small herds, where a valuable bull for each herd would constitute too large a part of the total investment. Thus the organization enables the owners of small herds to unite in the purchase of one good bull, so that each may own a share in a registered sire of high quality. Though still in its infancy, the cooperative bull-association movement promises to become eventually a very great factor in the improvement of our dairy cattle.

SOME ADVANTAGES OF COOPERATIVE BULL ASSOCIATIONS.

BETTER AND FEWER BULLS.

The typical cooperative bull association, as organized in this country, is composed of from 15 to 30 farmers and jointly owns five bulls.

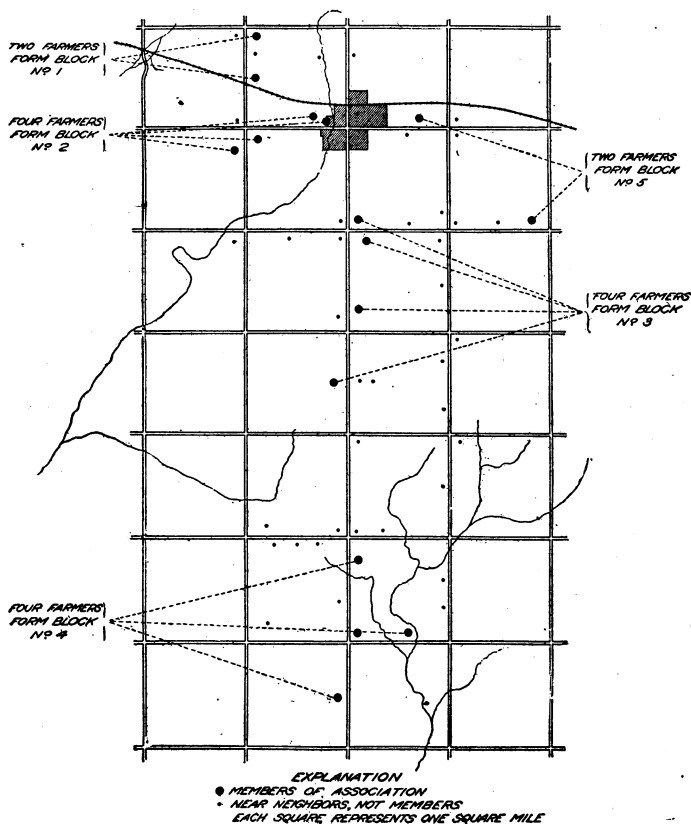


FIG. 1.—Map showing location of members of the Roland Cooperative Bull Association, in Iowa.

Its territory is divided into five "breeding blocks," one bull being assigned to each block. As many as 50 or 60 cows may belong to the farmers in each block, and the bull in the block should be kept on a

farm conveniently situated. To prevent inbreeding each bull is moved to the next block every 2 years. If all the bulls live, and if all are kept until each has made one complete circuit, no new bulls need be purchased for 10 years. In this way each member of the association has the use of good purebred bulls for many years, at a cost of only a small part of the purchase price of one bull. Ordinarily the purchase price and the expense of supporting the bulls are distributed among the members of the association according to the number of cows owned by each.

A map showing the location of members of a successful bull association is shown in figure 1. This association is composed of 16 farmers and is organized into five blocks. The farms are so situated that the bulls are at no great distance from the farm of any member. Before the association was formed each farmer had an average investment of \$89 in a scrub bull. These bulls were disposed of when the association was formed and five purebred bulls were bought at \$240 each, or an average of \$75 for each member. A larger membership would reduce expenses still further. As in other associations, the farmers united in the use of one breed and selected good bulls of that breed.

An advanced step which has not yet been taken by any association is the purchase of an exceptionally good bull to mate with the best cows in the herds of every block. Such a plan for improvement of the better cows of the herd is applicable to purebred herds as well as grade herds.

For the purebred herd the cooperative bull association undoubtedly will do as much as for the grade herd, because it enables the breeders of any class of stock to buy better bulls than they otherwise could afford. In case the association is large and composed of well-to-do breeders of purebred dairy cattle, bulls of the highest class for use with all the cows are within its reach financially.

LOW COST OF COOPERATION.

That the need of purebred bulls is urgent in many parts of the country is evident from the facts brought out by the United States Department of Agriculture's study of eight districts in the States of Iowa, Minnesota, and Massachusetts in which there were no associations. In this survey information was obtained regarding 1,219 farmers owning 817 bulls whose average value was \$76. Had the owners of these cheap bulls been properly organized the same investment would have purchased the necessary bulls of an average value of \$283. On the farms mentioned nearly four times as many bulls were used as would have been required under proper organization. The farmers were therefore feeding four bulls when they should have been feeding only one.

Data from one of the first associations organized under the direction of the Department of Agriculture illustrate this very well. Before the association was formed the bulls in use had an average market value of \$89. The average price paid by the association for registered bulls was \$240. Price does not always correspond to value, yet as the bulls were carefully selected the price in this case is doubtless a fair index of true worth. In this association each farmer's investment for a share in a good registered bull was \$14 less than his former investment in an animal of inferior breeding and doubtful merit.

Actual first-cost figures from other cooperative bull associations are even more encouraging. In one association having more than 100 members the original cost to each member was only \$23. The members already have had the use of good purebred bulls for 4 years and probably will have their use 6 years longer without additional cost other than maintenance. Another association with more than 50 members has had the use of good purebred bulls for more than 7 years at an average investment of less than \$25 a member, with prospects of being able to use them for 3 or 4 years more. Practically all dairymen desire to raise purebred cattle, but comparatively few can afford individually to purchase such bulls as are needed to develop a profitable purebred herd. The bull association overcomes the difficulty, and the money saved can be used toward the purchase of registered females.

QUICK RETURNS ON THE INVESTMENT.

When questioned regarding the value of cooperative bull associations, 150 farmers in Maryland, Michigan, and Minnesota estimated that the use of bulls belonging to the organization increased the value of the offspring in the first generation from 30 to 80 per cent, with an average of 65 per cent. Usually in business transactions in which there is a probability of great gain there is a possibility of heavy loss, but in the bull associations the chances of profit are excellent, with little probability of loss. The investment is so small and the chance for herd improvement so great that the net returns greatly exceed the small original investment.

LINE BREEDING POSSIBLE.

An association having as many as five or six breeding blocks should keep and use all its good bulls as long as they are fit for service. Advancing the bull to the next block at the end of 2 years does not eliminate him; it simply makes it possible to avoid inbreeding. Line breeding, on the other hand, is a common and desirable practice, and the bull association offers exceptional opportunities for conducting that kind of breeding. In an association composed of breeders of purebred dairy cattle carefully selected

bulls produced in one block may be used in other blocks, and the organization may thus continue indefinitely without purchasing bulls from outside sources if such a plan seems advisable. The same practice may be followed when only a few high-class registered cows are owned by members of any association. The cooperative bull association, therefore, offers an excellent opportunity for intelligent, long-continued line breeding. Skillful mating, when combined with careful selection of the best animals, makes great improvement possible.

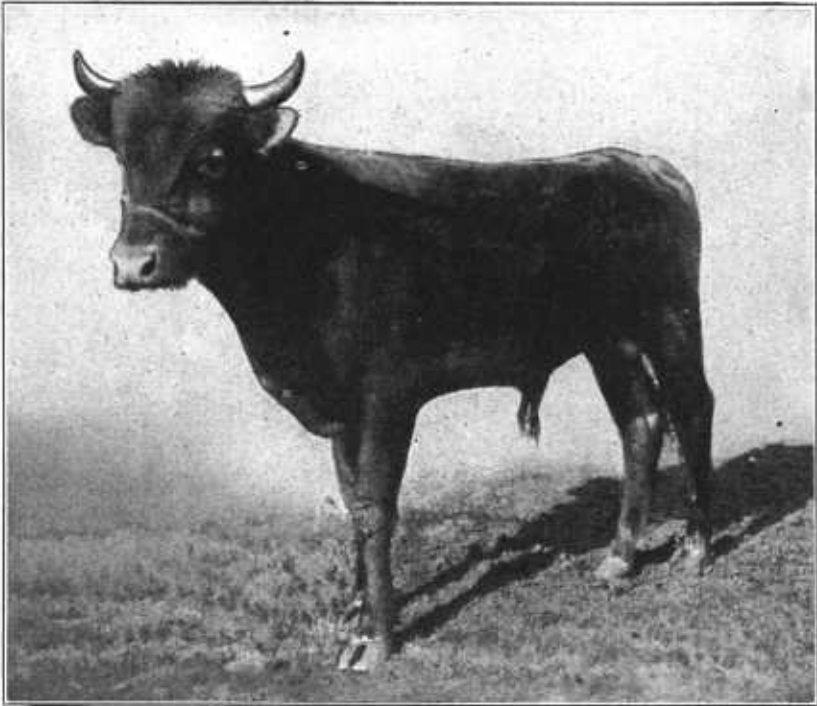


FIG. 2.—Type of scrub bull that fortunately is becoming less common.

ELIMINATION OF THE SCRUB.

Figure 2 shows a scrub bull. Every farmer will recognize the type, and certainly he would not want to breed his cows to such a scrub. A bull similar to the one shown was sold for \$8 when a year old. The hide alone of a good yearling bull should easily bring half as much. The bull association eliminates the scrub bull and economically substitutes such bulls as the one shown in figure 3.

COMMUNITY BREEDING ENCOURAGED.

Ten years ago a farmer in northern Wisconsin began to breed Guernseys in a Holstein district. He now has a fine herd and wonders why buyers never come his way. The reason is that when buyers

want Guernseys they naturally go to a Guernsey district. As a rule, the breeders of purebred cattle already have learned this lesson. The principle is as true of grades as of registered stock, but many owners of grade cattle seem to have overlooked it. All dairy breeds are sometimes found in the same neighborhood, and even on the same farm several dairy breeds and all possible combinations of them are seen. Perhaps one year a Holstein bull is used, the next year a Jersey, and occasionally a bull of no particular breed. In a grade herd recently studied there were Holsteins, Guernseys,

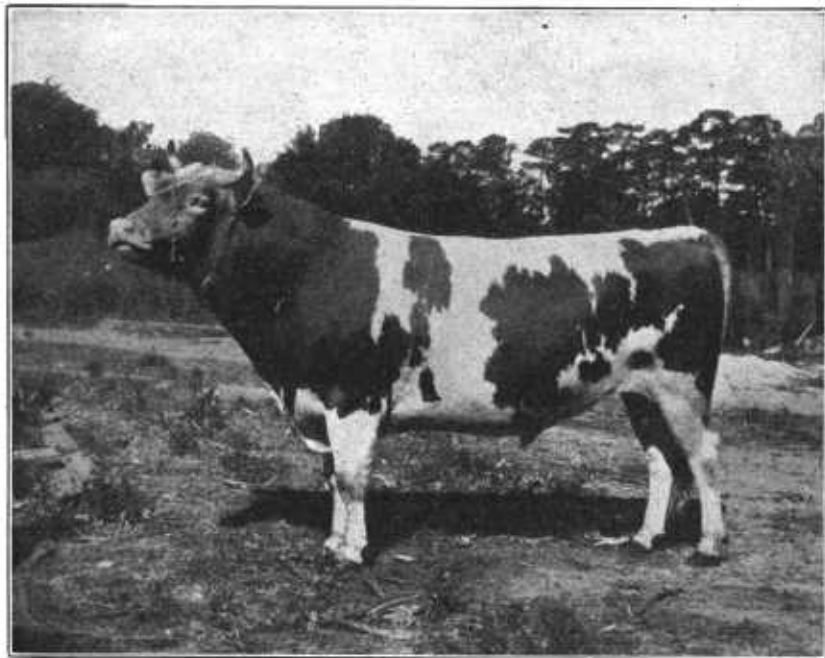


FIG. 3.—A good type of dairy bull.

Jerseys, Shorthorns, and every possible cross and mixture of these breeds. The owner admits that his cattle do not sell to advantage, and the reason is not hard to find.

The bull association encourages the keeping of only one breed on the farms of its members and the establishment of that breed in the community.

THE INFLUENCE OF HEREDITY.

In all bull-association work the influence of heredity is recognized. Since like tends to beget like in production as well as in appearance, there is little danger that the purebred bull whose ancestors for several generations have been first-class individuals

will inherit or transmit the qualities of some inferior distant ancestor. If he is also well formed, strong, and healthy, he will almost certainly increase out of all proportion to his cost the income from the first generation of a scrub or low-grade herd. In fact the time may come when it will be possible to eliminate all bulls except those whose dams have shown through test that they are profitable producers. If the best bulls were used to their full capacity in purebred herds, and if only good purebred bulls were used in the ordinary dairy herds, the income from the dairy business would be vastly increased. If possible, all bulls used should be from tested dams with a butterfat record of not less than 400 pounds. The dams should be from high-producing ancestors. The bull should always be superior to the best cows in the herd, and all cows should be well bred and carefully selected.

IMPROVEMENT DUE TO SIRE.

Few organizations have been in operation long enough for the producing daughters of an association bull to be compared with their dams. The following figures, however, received from an association at New Windsor, Md., show the improvement due to the sire:

<i>Average butterfat production of daughters of association bulls compared with that of their dams.</i>		Fat average (pounds).
Bull No. 1:		
7 daughters.....		270.5
7 dams.....		208.3
Increase.....		62.2
Bull No. 2:		
7 daughters.....		281.6
7 dams.....		226.4
Increase.....		55.2
Bull No. 3:		
2 daughters.....		369.5
2 dams.....		254.0
Increase.....		115.5

Fourteen out of 16 daughters excelled their dams. The average increase of the daughters over dams was 33.8 per cent. The increase of the daughters of the good bulls mentioned above occurred with remarkable regularity. On the other hand, a poor bull decreases the production of his daughters.

Note the following results of using a scrub bull:

The dam produced.....	145 pounds of fat.
The daughters of the bull and this dam produced.....	126 pounds of fat.
The granddaughter of this bull produced.....	99 pounds of fat.

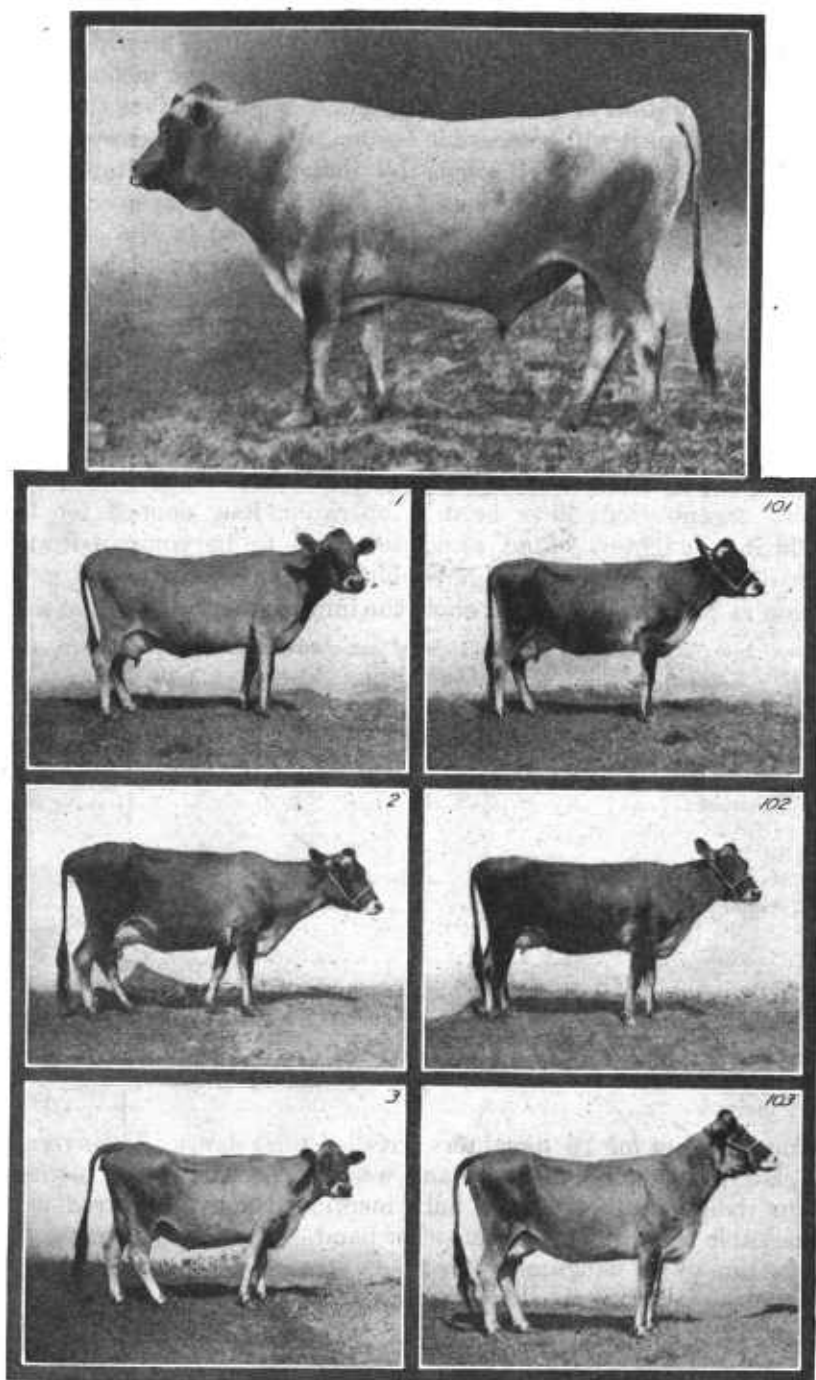


FIG. 4.—A good, tried bull, whose daughters (cows 101, 102, and 103) in one year showed an average increase of 47.9 pounds of butterfat as compared with their dams (cows 1, 2, and 3).

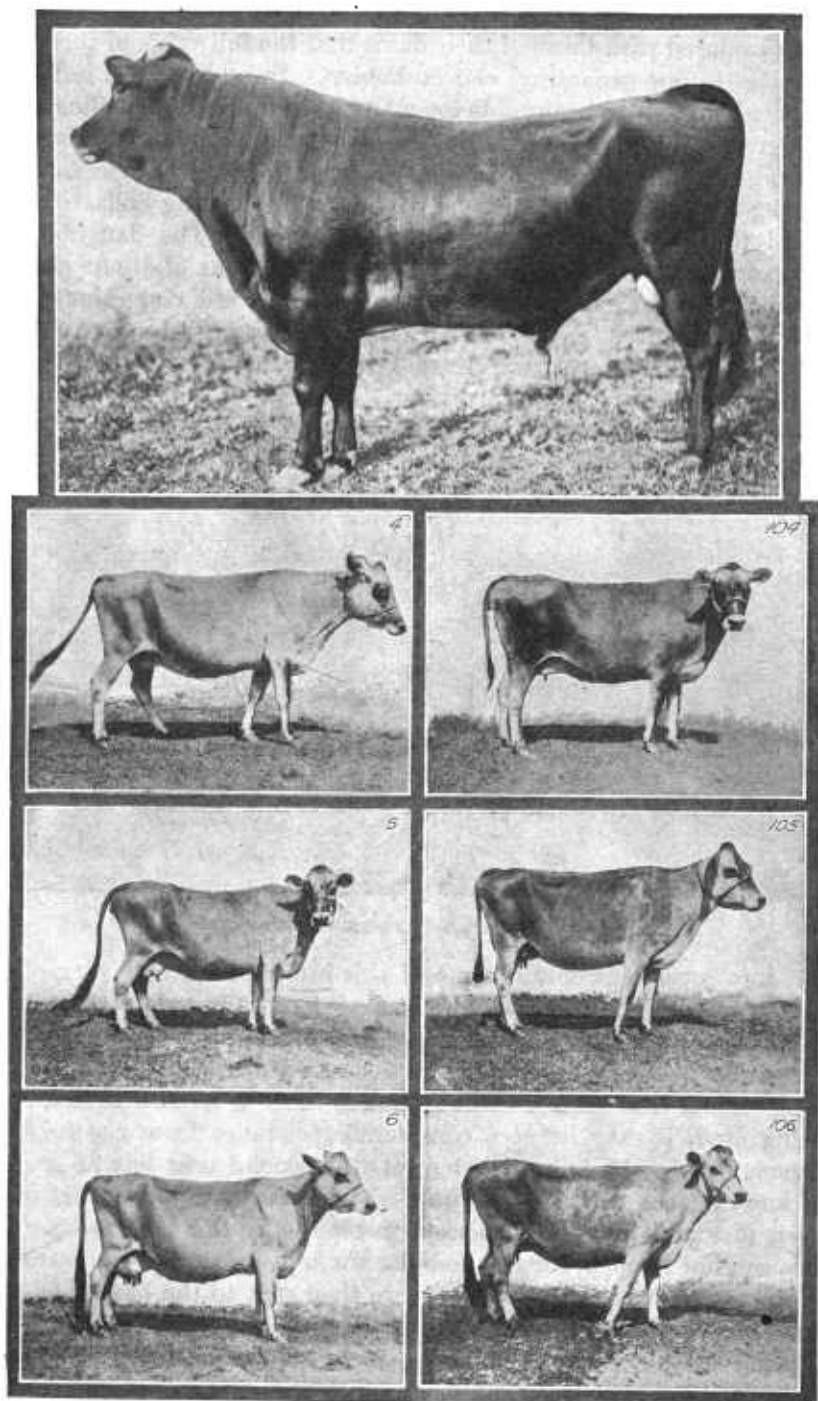


FIG. 5.—A bull that failed. His daughters (cows 104, 105, and 106) in one year showed an average decrease of 26.4 pounds of butterfat as compared with their dams (cows 4, 5, and 6).

It is only when the life-time production records of all his daughters are compared with those of their dams that the full value of the bull's services to one generation can be known. In addition his influence on the herd will be noticeable for many generations. This illustrates the great value of a good bull. The damage done by an inferior bull may be equally great. No other argument should be necessary in urging that every association be particular in selecting bulls.

All purebred bulls are not equally valuable. The daughters of some are inferior to their dams, while the daughters of others greatly excel their dams. The only way one may know the real value of the bull is to compare the production records of his daughters with those of their dams. It takes at least 3 years from the time the bull is

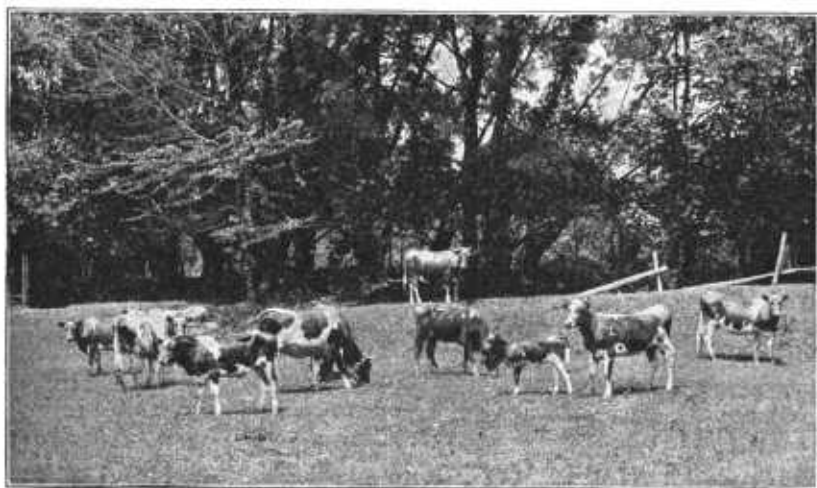


FIG. 6.—A good beginning by a bull-association member.

put into service to obtain some of this information, and very often the farmer has disposed of the bull a year or more before the end of that time. When he finds that the bull has improved the herd, his search for the bull may end in the stockyard or with the butcher. It is seldom that such a bull is found again. If he still lives and is being used, it may be at a considerable distance from the original owner. Since the two do not meet, the second user has no means of knowing the worth of the bull. Thus many valuable bulls have been lost and inferior ones used instead. In the bull association this can not happen, for all the bulls are kept in the association until thoroughly tried. The poor ones are then sent to the block and the good ones kept and judiciously used to their full capacity to the end of their usefulness, which may be 12 or 15 years. This advantage alone is enough to repay all the trouble and expense of forming an association.

EDUCATIONAL VALUE OF BULL ASSOCIATIONS.

The educational value of a cooperative bull association doubtless exceeds the direct net cash returns. The isolation from neighbors is at once changed to a contact that informs and enlightens, and, as a rule, all members of the association become greatly interested in the improvement of their herds. They study live-stock pedigrees, individual conformation, and production records. They hold meetings at which dairy problems of all kinds are discussed. The members come to understand the value of organization, petty jealousies give

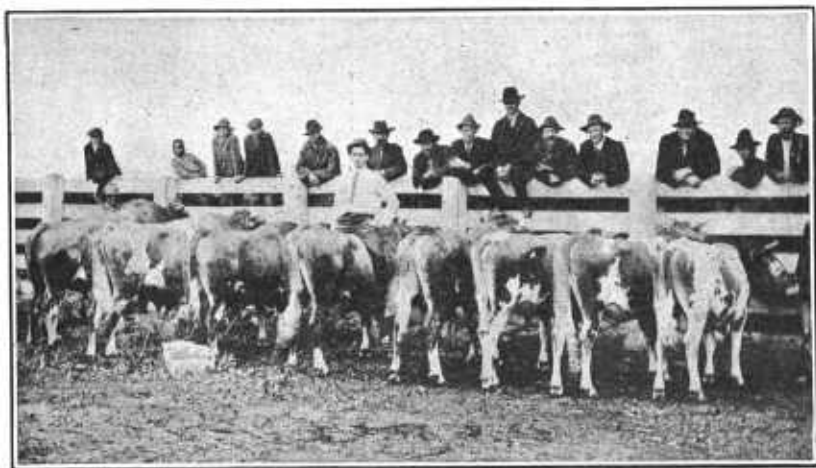


FIG. 7.—Rowan County (N. C.) farmers organized their cooperative bull association in 1916. This picture shows the first eight bulls they bought, lined up just as the bulls came from the freight car.

way to a broader progressive spirit, and each individual in the community is helped. Even the boys and girls take more interest in the farm and especially in the dairy herd.

A North Dakota association held a cattle show at which cows, bulls, and young stock were exhibited. The show was held in connection with a three-day chautauqua, and it was estimated that 5,000 people visited the show and the chautauqua. Great interest centered about the boys' stock-judging contest, which was one of the features of the occasion. The educational value of such work can hardly be overestimated.

In Michigan the work of a bull association led to an annual five-days' agricultural school in winter and an annual summer picnic. At the picnics small cash prizes were given for the best heifers exhibited. This association consists of 22 members who invested \$25 each, for which they have already had the use of good purebred bulls for 6 years.

ERADICATING DISEASE.

Cooperative bull associations play a considerable part in combating diseases of dairy stock. While unorganized dairy-farming operations have a tendency to spread abortion, tuberculosis, and other communicable diseases, the policy of the bull associations works in the opposite direction. For example, an Iowa association will not



FIG. 8.—Calf sired by association bull gives junior member a good start in dairying.

allow any of its members to receive the benefits of the association until his herd has been tested for tuberculosis and all reactors or diseased animals eliminated. One farmer who did not dispose of the reactors after the tuberculin test was applied was refused the use of bulls until he complied with the rules of the association.

The educational work of each association makes the members alert to prevent the introduction and spread of disease of any kind. The well-managed bull association requires that the cattle of each member shall be tested for tuberculosis and takes every known precaution to prevent the introduction of infectious abortion.

HOW TO ORGANIZE A BULL ASSOCIATION.

Success in the operation of a cooperative bull association depends a great deal on the care that is used in its organization. To begin with, those interested should obtain as much information as possible regarding the plan of operation and should consult with the county agricultural agent. He may be able to give valuable information from experience, or at least will know where such information can be obtained, and he can help greatly in starting the organization. If a county agricultural agent is not available, write to the State agricultural college or to the Dairy Division of the United States Department of Agriculture at Washington, D. C., either of which will be glad to give advice and assistance. It is advisable, if possible, to visit some near-by bull association in order to study the methods of operating, for the more information there is available the better will be the prospects for a well-organized and successful association.

As soon as the plan is thoroughly understood the question of the breed to be used should be definitely settled. Associations formed to use more than one breed usually result in the neglect of one of the breeds. Consequently an association should have only one breed. The tendency of many farmers to change from one breed to another from year to year must not be carried into the association. It takes careful study to make progress with a breed, and when a change is made the study must be begun again for the new breed. When once selected, therefore, the breed is established permanently for the association. Before joining, each farmer should understand thoroughly that when he joins the association the breed selected is not to be changed.

It is a great advantage for a community to acquire a reputation for a breed of cattle, and it pays an individual to make some sacrifices in order to use the breed selected by the association. Special advertising that is too costly for a small farmer to obtain alone is possible through an association. The large number of animals in the association offers great opportunity locally for the selection of breeding stock. Hundreds of cows are bred along the same family lines in an association, and opportunities are offered for line breeding that are not available to individual small breeders.

As soon as the breed is selected the secretary should correspond with breeders in order to find bulls for sale, if that has not already been done. Addresses of breeders may be found in agricultural papers or obtained from the several breed-registry associations. The State agricultural colleges and the United States Department of Agriculture also can often be of assistance in finding bulls. If the prices at which bulls can be purchased are known, it will enable the prospective members to estimate the cost and will expedite the organization.

Usually the question of cost is one of the first things that the prospective members wish to know. It is impossible, however, to know the exact cost before the number of members, the breed selected, and the price at which the bulls may be bought are known. Information from certain associations, however, shows a cost to the members of from \$4 to \$20 per cow, depending upon the purchase price of the bulls, the number of members, and the number of cows. This amount covers only the original purchase of bulls, and, barring accident or death, will suffice for a period of twice as many years as there are blocks in the association.

Application should be made to the secretary of the State for blanks and all necessary information for incorporating a bull association under the laws of the State. To indicate to him the type of incorporation desired, a copy of Articles II and IV of the constitution suggested in this bulletin should be inclosed with the request, and special mention should be made of the provision permitting only one vote for each member. It is usually best to engage a local lawyer to assist in the incorporation.

The territory should be mapped out into provisional districts where blocks of the association may be formed, to serve as a guide in organizing. The final arrangement of blocks can not be definitely settled, of course, until after the association is organized and is ready to purchase bulls.

In order to bring the bull-association plan before the farmers it is best at the outset to explain the subject and ask each to sign an agreement somewhat like the following:

BULL ASSOCIATION MEMBERSHIP CONTRACT.

We, the undersigned dairy farmers of.....County, realizing the need of more profitable dairy cows and the importance of purebred dairy bulls of good breeding, hereby agree to become members of the proposed cooperativeBull Association.

We agree to be governed by the constitution and by-laws adopted by our association at the organization meeting. Each will pay his respective proportion of the cost of the bulls and their keep, the total cost of the bulls purchased being prorated equally on all the blocks, the cost for each block to be paid by the member or members of that block alone and to be divided among the members of the block in proportion to the number of cows that each member has subscribed therein. The cost per block shall not exceed.....and the maximum number of cows in any block shall be.....and the minimum.....cows.

We understand that each community or block which pledges the required number of cows shall be furnished a purebred bull of good breeding; said bulls to stand in the block for 2 years, after which time each bull will be transferred to the next block. This is to be continued until each block has had the use of each bull for 2 years, or

as long as the bull continues to be serviceable. Only members of the association shall be allowed the use of the bulls owned by the association.

Each one of us agrees to enter the block nearest his farm.

Name.	Address.	Number of cows.
.....
.....
.....
.....
.....
.....

SUGGESTIONS FOR A FIRST MEETING.

When the required number of farmers have signed the agreement blank, the first meeting should be called. Those who have signed the agreement should have a personal notice of the meeting, and in addition the time and place should be generally advertised. An organization may profitably be formed with 3 blocks, but whenever it is possible 5 or 6 blocks should be pledged before the organization meeting is called.

SUGGESTED ORDER OF BUSINESS FOR ORGANIZATION MEETING.

1. Selection of temporary chairman and secretary.
2. Full discussion of the constitution and by-laws.
3. Adoption of constitution and by-laws.
4. Permanent arrangement of blocks.
5. Election of directors (permanent officers).
6. Arrangement of finances.
7. Selection and purchase of bulls.

The first order of business is the selection of a temporary chairman and secretary to hold office until a permanent organization is effected. The chairman will preside and see that there is a full and free explanation and discussion of the ideas of each member, so that all will have a comprehensive understanding of the aims of the organization. This is fundamental in a cooperative organization. One thing should be discussed at a time, and after every one has had an opportunity to express an opinion the chairman should call for a vote on that point. Those present should be urged to make suggestions, for only in that way can the most satisfactory constitution be made. Each one present should consider all questions in a broad way and be prepared to abide by the will of the majority.

The temporary secretary, of course, will record the proceedings of the meeting and keep a record of the questions discussed and of the final decision as shown by the vote.

It is a great advantage to have a specialist from the State college of agriculture or from the United States Department of Agriculture

to explain the plan and answer questions. After the discussion the constitution should be adopted by vote and signed by each farmer. The members then elect a board of directors, which chooses from its number a permanent president, vice president, and secretary-treasurer.

CONSTITUTION AND BY-LAWS.

A cooperative bull association should be incorporated, preferably under the State law regulating cooperative associations. If no such law exists, it is advisable to have the association incorporated under the general corporation law. Incorporation under one of these forms is desirable in order that the liability of individual members or stockholders for the debts of the entire undertaking may be limited as provided by State law. Otherwise the organization would legally be a partnership and each member would be individually as well as collectively responsible for all liabilities of the organization.

It is advisable that prior to organizing the undertaking an attorney should be consulted in order that the organization shall meet all the requirements of the State law.

The following constitution and by-laws are given as a guide for forming a bull association:¹

ARTICLES OF ASSOCIATION OR CONSTITUTION.

PREAMBLE.

We, the undersigned, incorporated under the provisions of act No. of the laws of the State of....., entitled....., and the acts amendatory thereof and supplementary thereto, do hereby make, execute, adopt, and sign the following articles of association and by-laws, to wit:

[If the association is not incorporated, creditors will have the right to sue any one or more members for all the debts of the association; but if it is incorporated, creditors will have to look to the corporation, and members will be responsible only in proportion to their stock.

The articles of association herein suggested indicate the mode of operation of a bull association. In case of incorporation they will have to be adapted to the legal requirements of each State, and in this legal advice should be obtained.

The preamble is so worded that there can be no mistake about the State laws under which the association is incorporated.]

ARTICLE I. NAME.

SEC. 1.—The name by which this association shall be known is the.....
Bull Association.

¹ Copies may be obtained by writing to the Dairy Division, United States Department of Agriculture, Washington, D. C.

[While the association name may seem to be of little importance, a fitting one may be of considerable benefit. The post office of the place of business and the breed of cattle used, when included in the name, have a certain advertising value and may bring inquiries that lead to sales and lasting business relations. While it is important for the name to convey as much information as possible about the business of the association, a long name is very cumbersome for business transactions.]

ARTICLE II. OBJECTS.

SEC. 1.—*Improved stock.* The purpose for which this association is formed is to bring about the rapid development of productive milk cows of good conformation of the breed. This is to be accomplished principally by the joint purchase, ownership, use, exchange, and sale of meritorious purebred bulls, and through the purchase and sale of cows and heifers.

[The statement of the objects of the association may determine under which law the incorporation should be effected. In some States certain forms of incorporation require smaller fees than others. An advantage in that respect, as well as in the scope of the business which may be transacted, can be obtained sometimes by making this section conform to certain requirements of the incorporation laws of the State.]

SEC. 2.—*Community development.* The association pledges itself to exert every possible influence for the improvement and furtherance of the live-stock industry of the community.

[This is a pledge that should not be passed over lightly, since the best success comes to a growing and active association. The energy and enthusiasm of the members always cause development of the association, and each member, as well as the community, is benefited by the improvement in the local live stock.]

ARTICLE III. LOCATION.

SEC. 1.—The principal office and place of business shall be the city or village of, in the county of, State of

[A place of business of the association is a legal requirement and should be selected for the convenience of all members. This is important, because the life and activity of the association depend upon the interest of the individual members, and the interest can be kept alive only by occasional meetings.]

ARTICLE IV. MEMBERSHIP.

SEC. 1.—*Qualification.* Any farmer of the county of and adjoining territory, owning one or more cows, may become at the time of organization, a member of this association and be entitled to its benefits and privileges by signing and agreeing to comply with the constitution and by-laws and purchasing one share of stock. Any farmer who wishes to become a member after the adoption of this constitution shall, in addition to the requirements at the time of organization, make his application to the secretary of the association, stating the number of cows that he

will subscribe and the block to which he desires to belong, but before the applicant becomes a member his application must be accepted by the board of directors.

SEC. 2.—*Votes.* Every member shall be entitled to one vote and only one. No vote by proxy shall be permitted.

[An important qualification for membership is the willingness to cooperate in carrying on the plans approved by the majority. One vote for each member, without reference to the number of cows subscribed, allows each equal weight in directing the affairs of the association. Every member must thoroughly understand that he has a definite part to play in the affairs of the organization and that this part includes the careful handling of his individual breeding operations.]

ARTICLE V. BLOCKS.

SEC. 1.—*Blocks defined.* The term "block" in this constitution shall mean a subdivision of the association for the convenient grouping of members owning the required number of cows, so those in each block during the same period of time may make use of one of the bulls of the association.

SEC. 2.—*Designation of blocks and minimum number.* The association shall be divided into three or more blocks and the blocks shall be designated numerically and in order.

SEC. 3.—*Blocks arranged by board of directors.* The subdivision of the association into blocks, the addition of new blocks, or any change in the arrangement of the blocks shall be made with the approval of the board of directors.

[One of the greatest advantages of a bull association is the opportunity it affords to exchange bulls with another block every 2 years without any additional cost. In order to obtain the most benefit, however, the association should contain at least 3 blocks, which will supply bull service for 6 years. If the association purchases young bulls, by the end of that time they will be about 7 years old. With proper handling the service of bulls can be extended much beyond that age, and it is more economical, therefore, to have more than 3 blocks in an association, 4, 5, or 6 blocks apparently giving the best results. There are successful associations with even larger numbers. A desirable feature of a large association is that because of the large number of members the assessments for replacing a bull are very small. However, some of the large associations are unwieldy, and the exchange of bulls is not so satisfactory as in an association containing 5 or 6 blocks. It is suggested, therefore, that a large association arrange for the exchange of bulls in sections of from 3 to 5 blocks.]

The grouping of the members in the block should always be such that each can take his cows conveniently to the farm where the bull is kept. If the arrangements are thoroughly understood in the first place any unsatisfactory feature will be accepted and later misunderstandings avoided. No definite distance can be given as the maximum which a member should travel to take his

In arranging the blocks in the association an important consideration is to place them so that it will be convenient for the members of every block to attend the meetings. The arrangement of the blocks often requires adjustment after the association has been in operation for a time. Sometimes the change is to enlarge a block and take in more members, while at other times a division is necessary. The members are constantly making changes which may affect the blocks and it is necessary, therefore, to leave the arrangement of those matters to the board of directors.]

[The selection of the bull is discussed on page 32. The length of time that the bull remains in a block is 2 years. Theoretically this plan should not be varied, but, on account of breeding operations, sickness of the bull, or other causes, it may be advantageous to leave a bull in a block for a longer or a shorter period.]

SEC. 1.—*Officers.* The association shall elect a board of directors, who shall by ballot elect from their own number a president, a vice president, and a secretary-treasurer.

SEC. 3.—*How elected.* One of the directors shall be elected from each block to serve one year; and if there are fewer than 5 blocks in the association, additional directors shall be elected at large. If the number of blocks is 6 or any even number higher than that, one director at large shall be elected. All directors shall be elected by the association and not by the individual blocks thereof.

SEC. 4.—*Names of directors.* The names of the directors to serve for the first year (or until their successors are elected and qualified) are:

[illegible]

SEC. 5.—*Vacancy.* In case of a vacancy in the board of directors caused by the creation of a new block, by death, resignation, removal, or otherwise, the board shall appoint a director to hold office for the remainder of the term.

ARTICLE VII. CAPITAL STOCK AND ASSESSMENTS.

SEC. 1.—*Capital stock.* Each member shall own one, and only one, share of stock of the par value of \$1.

SEC. 2.—*Assessment.* The payment for bulls and of debts not otherwise provided for in the constitution or by-laws of this association shall, whenever it becomes necessary, be provided for by means of assessments levied by the board of directors. The total assessment shall be levied equally on each block of the association. The total amount of the assessment or assessments shall not exceed.....dollars per block the first year, and shall not exceed.....dollars per block each year thereafter; except that, in case it becomes necessary to purchase a bull for extra service or to replace one whose service has been lost through accident, death, or any other cause, then the total yearly assessment per block may be raised to cover the extra expense. Assessment levied to purchase a bull to replace one lost shall be prorated equally on all blocks of the association.

The assessment on each block shall be paid by the member or members of that block alone and shall be divided among the members of the block in proportion to the number of cows that each member has subscribed therein.

[Section 1 of this article covers the requirements of States where it is necessary to provide for capital stock in order to incorporate. As already suggested, a local attorney should be engaged to assist in incorporating and in drawing up the constitution and by-laws so as to do everything in compliance with the laws of the particular State in which the organization is formed. The business transactions of an organization of this kind are such that capital stock does not provide cash for carrying on the business. It is therefore best to make provision only for the smallest capital stock required to bring the organization under the incorporation laws of the State in which it is organized, and to raise the money needed by assessments in the way provided by section 2. It may be that the laws of some States make it possible to incorporate without stock, in which case section 1 should be omitted and section 2 should be preceded by the following statement: "There shall be no capital stock of this association, but in lieu thereof," etc.

Every effort should be made to arrange all the affairs and obligations of the association on a fair and just basis. In order to facilitate the collection of assessments and to accommodate the members, it is sometimes advantageous to permit the members to give notes to the association, payable on demand.

Each member must realize that all parts of the association can not be arranged entirely according to his wishes. He should remember that the association carries such great advantages that it pays to put up with what he thinks are undesirable features. Such conditions are met with in private affairs and can not be eliminated in an association.]

SEC. 3.—*Payment.* Each share of stock subscribed and each assessment levied shall be paid by the members to the treasurer of the association, whereupon the money shall be available for the conduct of the business of the association.

SEC. 4.—*Notice of assessment.* Whenever an assessment is levied, the secretary-treasurer shall mail a notice to each member 10 days before such assessment is due, stating the total amount assessed, the amount per block, the amount per cow in each block, the number of cows subscribed by the members, and the date on which the assessment shall become due. Six per cent shall be added to the amount of any assessment not paid on or before the date that it becomes due. The penalties imposed shall be paid to the treasurer together with the assessment, and shall become part of the money available to conduct the business of the association.

[The form of assessment notice given below may be modified to suit local conditions.]

NOTICE OF ASSESSMENT

OF THE

.....
COOPERATIVE BULL ASSOCIATION.

.....
(Post Office.)

.....
(State).

.....
(Date).

.....
(Name).

.....
(Address).

DEAR SIR: Your directors have found it beneficial for the association to incur obligations as follows:.....

.....
Total amount, \$. Total per block, \$. In
block No. the total number of cows subscribed is. The assessment
per cow amounts to \$. You have subscribed. cows and your total
assessment is \$. This assessment is due.
(Month). (Day).

19. In accordance with the constitution and by-laws of the association 6 per cent
will be added to this assessment if not paid on or before., 19.

.....
Secretary-Treasurer.

[At first glance section 4 may appear to be strict, but it must be remembered that a strict business conduct of the association is essential to its successful operation. The manner in which finances are handled indicates the strength or the weakness of the association. It is very important that the payment of assessments be made promptly, but this need not work hardship on the members, since they determine the time at which payment shall be made. When cash is not available it is always possible to make payments by note

to the association, but the best way is for the member to borrow the money and thus leave the association free from incumbrance. The provision for a *penalty* of 6 per cent of the face value added to the assessment is an added incentive to make the payment on time.]

SEC. 5.—*Failure to pay assessment.* Any member failing to pay or to make satisfactory arrangement for the payment of an assessment within 30 days from the time such assessment is due and payable shall forfeit all rights as a member.

[Section 5 is designed to cover the absolute refusal of a member to pay, make arrangements for paying, or withdraw. It allows the association to rid itself of a delinquent member and to continue to carry on its affairs in a businesslike way.]

ARTICLE VIII. DISSOLUTION.

SEC. 1.—This association can be dissolved only by action taken at a regular meeting, called for the purpose, when three-fourths of the members are present, and when three-fourths of those present vote in favor thereof. If no quorum is obtained by the first call for a general meeting at which the proposition of dissolution is to be taken up, a second general meeting, regularly called, may decide the matter by a majority vote, regardless of the number of members present.

SEC. 2.—When dividends are declared or dissolution takes place, the dividends or assets shall be divided among the members in proportion to the assessments they have paid, and not in proportion to their equal shares of stock.

[The dissolution of a bull association is a misfortune to the dairy interests of a community. Careful attention therefore should be given to insure proper organization so that the association may operate for a long period.]

ARTICLE IX. AMENDMENTS.

SEC. 1.—These articles of association may be amended by a two-thirds majority vote of the members present at any annual meeting.

[This requirement is made because the constitution is the foundation upon which the organization stands and it should not easily be changed.]

BY-LAWS.

ARTICLE I. DUTIES OF OFFICERS.

SEC. 1.—*Management.* The board of directors shall have the management and control of all the business of the association, fix the compensation of the officers, make proper arrangement of blocks and membership therein, provide a serviceable bull for each block, select, purchase, and sell the bulls of the association, fix the rate of compensation for bull service, arrange for a keeper and his compensation, and for the care and handling of the bulls.

SEC. 2.—*Officers.* The president, the vice president, and the secretary-treasurer shall have the usual functions of such officers.

SEC. 3.—*Annual report.* The secretary-treasurer shall mail to each member 10 days before the annual meeting a statement approved by the board of directors showing the financial condition of the association, which statement shall be acted upon by the members at the annual meeting.

[The full membership is too unwieldy to transact the detailed business of the association; it is therefore necessary to arrange for a smaller body for the purpose. The directors are elected by the members and are responsible to the members for their actions. The secretary-treasurer usually transacts the bulk of the business for the directors and upon him rests very much of the responsibility for the successful operation of the association. It is well, therefore, to select for this position a man who is keenly alive to and interested in bull-association work. His duties consist in keeping the minutes of the meetings and the breeding records for the whole association, and the handling of all the association's correspondence. The proper keeping of the breeding record involves a thorough understanding of the use of herdbooks of the breed selected as well as a knowledge of the individuals and families of that breed. This official also may have to buy and sell live stock, especially if the association desires to market surplus animals cooperatively. In other words, he is the man in the association who more than any one else should understand all its operations. He should not be changed often; therefore a well-established farmer who is not only particularly interested in the breed but also in the problems of the farm and of the community should be selected. The position is one of considerable advantage to a breeder because he gets in closer touch with the breed. In the beginning the secretary-treasurer would probably serve without compensation, but as the association enlarges and makes greater demand upon his time he should receive pay.

The business transactions of the officers and directors should always be carefully explained to the association in order to prevent any mistrust or dissension. As a rule, members are long-suffering in regard to faults but are quick to resent their concealment. Frankness of the members toward the officials of the association is essential, particularly in combating abortion, tuberculosis, or other contagious or infectious diseases. Members should keep in mind the fact that an individual is often unable to transact his private business satisfactorily and therefore should be patient with those in charge of the association's business. Trivial matters never should be allowed to disturb the business affairs of the organization, but questions of importance should always be presented to the proper officers and carefully discussed. Frankness in presenting difficulties usually results in a satisfactory adjustment.

From one cause or another a bull may prove to be a nonbreeder, and sometimes thoughtless members do not accept such an occurrence as unavoidable, as they would in their own herds. The loss of an animal in their herd does not deter them from continuing the raising of stock, whereas the loss of but a fraction of the money invested in

a bull association often is considered a sufficient reason for pronouncing the bull association a failure. Accidental loss in bull associations will be no greater than in the case of an individual; probably because of fewer bulls and the better care which they receive it will not be so great. It is advisable to discuss the question of accidents when the association is formed, so that if one occurs the members are ready to meet the required assessment for replacement.]

SEC. 4.—*Bond.* The secretary-treasurer shall give a bond for the faithful performance of his duties in the sum of dollars. The cost of providing this bond shall be paid by the association.

[A bond is a proper business precaution that the secretary-treasurer should not consider as an expression of distrust but merely a practice required by business concerns.]

SEC. 5.—*Books.* The secretary-treasurer shall provide, at the expense of the association, the necessary record books and blanks for the caretaker in each block.

[A careful record should be kept of the essential facts and figures connected with the operation of the bull association. The more complete the records the better will be the progress of the association. Complete and accurate records should be kept of all financial transactions, and all record books, whether for financial matters or for breeding records, should be uniform for all blocks. The breeding records include the name and registry number of the cow (if purebred), the owner's name, the name and number of the service bull, and the date of service; a space is left for recording the date of calving and the sex of the calf. These records may serve as an indication of the presence or absence of contagious abortion in the association, and they are necessary for the proper business conduct of the association.¹]

SEC. 6.—*Audit.* At the annual meeting an auditing committee shall be elected by the members, which committee shall audit the books and accounts not more than 30 days nor less than a week before the next annual meeting, and shall make a report to the association at that meeting.

[Auditing is an essential business practice for all well-regulated organizations. It does not carry any suggestion of suspicion, but a careful audit will detect any irregularities. The chief value, however, is the information which it gives of the methods and practices used in conducting the business. Do not neglect the audit.]

SEC. 7.—*Service fees.* Service fees shall be fixed by the board of directors. The service fee so fixed shall be charged to members of the association and shall be collected by the keeper of the bull at the time of service. Service fees so collected shall be reported to the secretary-treasurer at least 10 days before each annual meeting, together with a record of the cows served, stating date of service, the name and number of each cow, and her owner. The regular breeding charges, determined by the board of directors, shall apply only to the number of cows subscribed by each member. If a member desires to breed more than the number of cows subscribed, the breeding

¹ A plan for keeping such records will be furnished, upon request, by the Dairy Division, United States Department of Agriculture.

charge for each additional cow above that number shall be \$3. The service fee for cows that have been subscribed by the members shall be sufficient to cover the cost of keep of the bull.

[The service fees provide the fund for the care of the bull. The charges can not always be determined definitely in advance, so that the matter should be left in the hands of the directors to make such adjustments as they deem necessary. It is very important that each member pay the breeding fee promptly, not only that finances may be properly taken care of, but also that the trouble for the keeper of the bull may be reduced. It is also essential that the caretaker keep the records of breeding in a careful manner and make full and accurate reports to the secretary.

It is only just that the fee to members for breeding more cows than were originally subscribed should be slightly greater than the combined amount of the breeding charge and the original assessment per cow. If, for instance, the assessment per cow is \$10 in an association of 5 blocks, that amount, barring accidents, will pay the assessment for a period of 10 years, equal to \$1 annually. If the breeding charge for cows subscribed is 75 cents, a charge of \$3 should be made for the extra cows.

In a bull association trouble sometimes results through lack of funds to meet incidental expenses. This difficulty may be overcome either by assessment or preferably by slightly increasing the breeding charge so that there will be a surplus after paying for the keep of the bull. Assessments and breed charges always should be large enough to meet the expenditures for which they are intended, and it is advantageous to keep a surplus on hand as a sinking fund against unforeseen expenses. The directors may designate a maximum amount for a sinking fund, and when an assessment is levied may add to it an amount that will provide for the sinking fund.

In some cases it may be advantageous to the association and to a member for him to breed some cows to outside bulls, but in such instances he should not be relieved of his obligation to pay the breeding charges pledged.]

ARTICLE II. MEETINGS.

SEC. 1.—*Annual meeting.* The annual meeting of the association shall be held at a place to be designated by the board of directors, on the day of of each year, for the purpose of electing members to the board of directors and for the transaction of such other business as may lawfully come before the meeting.

SEC. 2.—*Special meetings.* Special meetings may be called by the president on his own initiative, by the board of directors on their order, or by five members who sign a written request setting forth the purpose of the meeting. Notice of a special meeting shall be given by the secretary of the association by mailing a written or printed notice thereof to each member of the association at least 8 days prior to said meeting. Such notice shall state the object of the special meeting, and no other business than that stated in the notice shall be transacted at that meeting.

SEC. 3.—*Directors.* The board of directors shall meet as occasion requires.

[Meetings are vital functions of an association. The annual meeting is the most important, but one meeting a year is not sufficient. Business matters which need to be called to the attention of the members usually come up more frequently. It is an excellent plan to have at least one picnic or some other form of outing in which both business and pleasure are combined. Stock shows in which calf contests for boys and girls are included may be combined with some meetings. An automobile trip to all the blocks of the association makes a pleasant diversion and is of great educational value. When the meetings are few the interests of the members are not centered very strongly on the association, and there is usually a lack of cooperation.]

ARTICLE III. BULLS.

SEC. 1.—*Location and care of bulls.* The board of directors shall designate the places for stabling the bulls. The place for stabling shall be upon premises free from tuberculosis, as indicated by the tuberculin testing of the herds maintained thereon. Each block director shall, under the direction of the board of directors, be responsible for the proper stabling and care of the bull in his block, and enforce rules and regulations that the association or board of directors may make. He shall use his best efforts to keep the bull in a strong, vigorous, healthy condition on a sufficient and suitable ration, and with sufficient yardage to afford ample exercise in the open air, in addition to the protection of the stable. The bull shall not be permitted to run with the herd.

SEC. 2.—*Bull calf.* A bull may be bought as a calf, but shall not be used for service until the board of directors so orders.

[This section is discussed on page 33.]

SEC. 3.—*Guaranty.* All bulls shall be bought with a guaranty that they will pass satisfactorily a tuberculin test administered by an official veterinarian days after delivery. No bull or other breeding animal shall be purchased from any herd in which abortion has been prevalent at any time during the preceding two years.

SEC. 4.—*Segregation.* The bull shall be segregated from all animals until tested and accepted. At least four disinfections shall be given the bull during the first two weeks after arrival.

[It is of the utmost importance that the bulls shall be free from disease. This subject is discussed under the heading "Selection of bulls." To obtain the maximum benefit, however, the herd of each member should be tested for tuberculosis, as provided in the next section, and all reactors removed from the premises; otherwise the infection of the disease may be present and endanger not only the herds of the members but the valuable bulls provided by the association.

All bulls should be carefully disinfected to prevent contagious abortion. To do this clip the tuft of long hair from the opening of the sheath. Then disinfect the penis and sheath with a warm solution of compound solution of cresol, 1½ tablespoonfuls to 1 gallon of boiled water, or potassium permanganate, one-third teaspoonful to 1 gallon

of boiled water. Obtain as much information as possible in regard to contagious abortion either from the State agricultural college or from the United States Department of Agriculture.^{1]}

SEC. 5.—*Tuberculin test.* All cattle on the farm of members must, as soon as practicable, be tested for tuberculosis according to the accredited-herd plan conducted by the State and Federal Governments.

[Associations that incorporate this section in their by-laws and live up to it faithfully are taking a long step forward in the live-stock industry. Dairymen are looking more and more for herds with clean bills of health from which to replenish their stock. Careful testing and the disposal of all reactors is an effective way of cleaning out the disease, and while the losses sometimes seem rather large at first, the benefits eventually exceed them many times. The advertising that an association derives from being free of tuberculosis attracts buyers and causes many advantageous sales. The tuberculin tests should be repeated every 6 to 12 months.^{2]}

SEC. 6.—*Inspection.* The director of each block shall inspect the herds in his block at least once every two months, and also make a report for the block to the association at the annual meeting. Should any contagious or infectious disease appear in the herd of any member, that member shall report the fact at once to the block director, and shall forfeit his right to the services of the bulls of the association until such time as a competent veterinarian declares his herd to be free from disease.

[The duties of the block director are not numerous, but they are nevertheless important. He should know whether the bull has proper care and whether the yard and other places are in satisfactory condition. In addition he should keep a careful lookout for contagious diseases, should see that the proper arrangements are made for disinfecting the bull, and in fact look out for anything that has to do with the welfare of the association. Sometimes the directors hesitate to demand from the keeper the required attention to the bull. A poorly kept, underfed bull may be one of the causes for the breaking up of an association. A bull in poor condition is a discouragement to the members and gives the association a bad reputation in the community. On the other hand, if he is kept in excellent condition it is the best local advertisement that an association can have. The directors therefore should not hesitate to demand that the bull be properly kept, and if the keeper fails in his duty they should obtain another. By the use of tact the necessary attention can be obtained from the keeper or the bull changed to another keeper without causing any bad feeling.

¹ Farmers' Bulletin 790, "Contagious Abortion of Cattle," will be sent free on request to the United States Department of Agriculture, Washington, D. C.

² A copy of Farmers' Bulletin 1069, entitled "Tuberculosis in Live Stock," issued by the United States Department of Agriculture, should be provided for each member of the association in order that he may be familiar with the disease.

In some associations it is the practice of the directors to make an automobile trip several times a year to visit all the bulls in the individual blocks. This practice is an excellent one, has a good influence on the keeper, and keeps the directors in close touch with the association.

It may be that to require a member to report the presence of contagious disease in his herd works a hardship by temporarily depriving him of the benefits of the association. While it may be a temporary hardship, it is the only method of insuring the association against a much greater loss caused by the spread of disease. If this requirement is not closely followed, contagious disease may quickly spread to all the herds in a block and in the course of time throughout the association. If this provision is properly carried out, it is known when the herds are free from disease and when they are not, which allows the members to deal with one another with perfect confidence. The high standard of health which the association attains by this method attracts buyers and more than compensates the individual for the temporary sacrifice which may be necessary to free the herd of disease.]

SEC. 7.—*Service.* The bull shall not be allowed loose with any cow which has not passed a tuberculin test satisfactorily within one year, but shall be held upon the leash to prevent any unnecessary contact. Only one satisfactory leap shall be permitted at each service. No bull shall serve more than 2 cows in a day, nor more than 7 in a week, nor more than 75 in one year.

SEC. 8.—*Breeding regulations.* The keeper of an association bull shall not allow him to be used for the service of cows belonging to any member of the association who is not a member of his particular block without written permission from the board of directors, signed by the president or the secretary. Service shall not be allowed to cows owned by nonmembers. Heifers shall not be bred to calve under 24 months of age.

SEC. 9.—*Outside breeding of subscribed cows.* A member may breed his cows to purebred bulls of the same breed outside the association, but in such case he shall pay \$.... to the association for each cow that is bred outside.

[So much depends upon the individuality of each bull that no strict rule can be laid down as to the amount of service which may be allowed. The directors must exercise their best judgment, and by keeping close watch of each bull make such regulations as will keep him in good health and vigor. A good bull, especially when young, may be spoiled by misuse, and the keepers should cooperate with the directors in keeping him in the very best condition.

Twenty-four months is the youngest age at which heifers should freshen, and, though sometimes allowed to freshen earlier, careful breeders prefer to have them get the maximum development before calving.

Sometimes the service of association bulls is permitted to cows owned by nonmembers, but since the nonmembers can not be required to live up to regulations of the association it is an unsafe

practice. Under the assessment plan any farmer may easily become a member of the association and by paying the required assessment may have the benefit of breeding his cows.]

ARTICLE IV. WITHDRAWAL.

SEC. 1.—*Transfer of membership.* The association may by a majority vote of the members purchase the share of any member who desires to sell or who fails to pay any assessment. Membership may be transferred, but the association may restrict the transfer of membership to such persons as are made eligible by the constitution.

SEC. 2.—*Time.* Withdrawal from the association without getting new members may be made only on the first day of of each year.

SEC. 3.—*Notice.* Any member who wishes to withdraw and has no satisfactory substitute shall give to the president of the association written notice of such desire to withdraw not less than 30 days before the first day of of the year in which the withdrawal is desired.

SEC. 4.—*Vote.* From the date of notification the withdrawing member shall have no vote.

SEC. 5.—*Share.* The withdrawing member shall not be entitled to any share of a surplus.

SEC. 6.—*Compensation.* At the end of the fiscal year following his notification of withdrawal, any member who, for any reasonable cause, has withdrawn, shall receive such reasonable compensation for his investment in the association as the directors decide is equitable.

[The withdrawal of a member may become necessary, and it is only fair to the individual member that a just settlement be made. The member must consider, however, that his withdrawal upsets to some extent the plans of the association, and should be prepared to make some sacrifice for the privilege of withdrawing. If the withdrawing member can get a farmer who is not a member to take his place the disturbance of the plans of the association is very small. The best time for the withdrawal is at the annual meeting, when it is possible to make adjustments that will reduce the inconvenience.]

The following scale of reimbursement has been used by a 5-block association and is given here merely as a suggestion for those who wish to incorporate such a regulation: If the withdrawal is made before the end of the first year, the withdrawing member may receive 75 per cent of the total investment he has paid; at the end of the second year, 60 per cent; at the end of the third year, 50 per cent; at the end of the fourth year, 40 per cent; and at the end of the fifth year, 20 per cent.]

ARTICLE V. DIVIDENDS.

SEC. 1.—Any surplus in the treasury at the time of the annual meeting or at the end of the fiscal year may, by a majority vote at the annual meeting, be divided among the members in proportion to the amount of the assessments paid.

[The object of the association is to improve the stock and not to pay dividends. Occasion may arise, however, when money in the treasury ought to be returned to the members, and this article provides for its proper disposal.]

ARTICLE VI. AMENDMENTS.

SEC. 1.—The by-laws may be amended by a majority vote of the members present at the annual meeting or at a special meeting called for the purpose.

[The by-laws are intended to be more flexible than the constitution, and therefore it is provided that a change may be made more easily.]

AGREEMENT.

We, the undersigned, hereby adopt the above and foregoing constitution and by-laws, and jointly and severally agree to be subject to the rules and regulations thereof, and pledge for a basis of assessment according to said constitution and by-laws the number of cows set opposite our respective names.

Name.	Number of cows pledged.	Address.
.....
.....
.....
.....
.....

SELECTION OF BULLS.

Since the use of meritorious purebred bulls is the means by which members of the association expect to improve their live stock, one of the most important considerations is the selection of the bulls. Such bulls improve the herds, and the association interest increases in proportion to the improvement obtained. On the other hand, poor bulls cause the interest to decrease accordingly. If a poor dairy bull is used the milk production of the members' herds is greatly reduced, the interest is lessened, and these conditions may lead to the breaking up of the association. Unfortunately, an excellent dairy bull can be selected with certainty only when his daughters' records are known.

Such a tried or tested bull can be depended upon with great certainty to cause improvement in the herds of the bull association. The owner of a tried bull, however, usually knows the records of the animal's daughters and rightfully asks a high price for him. The high cost often makes the members hesitate to purchase such bulls for the association, and instead they buy younger and untried bulls whose ancestors have made good production records. No bulls should be purchased for an association except from one of these two classes. Considering the records of ancestors, the most important are those of the sire and dam. In the case of the sire the average of all his daughters' records is taken as the production record. Very often the records of some of the ancestors are lacking, but every effort should

be made to obtain bulls whose ancestors in the first two generations have an average yearly record of at least 400 pounds of butterfat at maturity.

The State agricultural college is in a position to assist in looking up pedigrees and records and always should be consulted. As soon as the money can be provided for the purpose, it is advisable for the association to obtain a set of Advanced Register or Register of Merit books and, if possible, a set of breed-registry books of the breed used, both of which are valuable for the reference of all the members of the association. Information regarding the cost of Advanced Register and Breed Registry books may be obtained from the breed associations as follows:

American Guernsey Cattle Club, Peterboro, N. H.

American Jersey Cattle Club, 324 West Twenty-third Street, New York, N. Y.

Ayrshire Breeders' Association, Brandon, Vt.

Brown-Swiss Cattle Breeders' Association, Beloit, Wis.

Holstein-Friesian Association of America, Brattleboro, Vt.

In choosing the bulls careful attention should be given to the line of breeding represented in their pedigrees. Efforts should be made to select bulls that have the same family lines in order that line breeding may be practiced when the bulls are exchanged. Before the bulls are finally purchased plenty of time should be given to selecting the line of breeding desired.

Although records of production are of great importance, it is very necessary also that the bulls selected have plenty of strength, great vigor, and good body conformation. If the members are not experienced in buying cattle it is well to ask the State agricultural college for advice and assistance in making the selection. When bulls are purchased merely on the production record of their ancestors better values can often be obtained by purchasing young bulls rather than mature ones. In buying calves or young bulls, however, the cost of raising them to maturity must be considered. After the association has been in operation for some time it can often buy young bulls to advantage, when there is time to raise them to breeding age before their services are needed.

In buying bulls special care should be taken to see that the animals chosen are healthy and especially that they are free from the infection of either tuberculosis or contagious abortion. If possible the bulls should be purchased from herds accredited by the Bureau of Animal Industry as being free from tuberculosis. A list of such herds may be obtained from the bureau. If it is impossible to buy from an accredited herd, purchase from a breeder who will furnish satisfactory evidence that the animals have passed the tuberculin test and have never reacted to that test.

FARMERS' BULLETINS RELATING TO DAIRY CATTLE.

[Available for free distribution by the Department.]

No.

743. The Feeding of Dairy Cows.

777. Feeding and Management of Dairy Calves and Young Dairy Stock.

790. Contagious Abortion of Cattle.

893. Breeds of Dairy Cattle.

954. The Disinfection of Stables.

1017. Cattle Scab and Methods of Control.

1057. Cattle Fever Ticks and Methods of Eradication.

1069. Tuberculosis in Live Stock.

